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05-27-2004, 06:55 AM #1	
gmZ Advanced Member  Join Date: Jan 2004 Location: SW Florida Posts: 893 2009 VUE Red Line	✎ Eliminating Instrument Panel Gap in S-Series Time to give back to this great board that has given me a lot of insight into my new to me '01 SC2. When I came on the board early this year, I posted a pic of a gap in my instrument panel where the front bezel meets the underside/brow of the I.P. top pad. General consensus was this was typical if not common and there wasn't much recourse short of replacing the top pad and the result would likely be either worse or if marginally better would slightly warp again over time. Have a look at the pic I posted: http://members.roadfly.com/georgemann/IPGapBefore.jpg Since I design this stuff for a living, I am particularly critical of I.P. fit and finish and clearly this design is quite poor unlike much of the rest of the car. I do like this car. The design of the I.P. or should say execution of the design is pretty much a sophomore mistake validated by an incompetent engineering manager to approve the construction of the I.P. for the Gen III S-series. I find the aesthetics of the Gen III I.P. quite pleasing to the eye but the design execution in terms of how it is assembled and the whole design basis is horrible. The design is much too dependent on a favorable tolerance stack up of individual parts. That said, I had to take it apart and improve things and tailor the tolerance stack because I couldn't live with the gap. It is pretty much a given from a design standpoint one never "intersects" or abuts the cluster bezel with a large top pad subject to variable shrink rate in the line of sight...makes the design much too sensitive to tolerance variation. The top pad should be shingled over the brow such that you never see a gap even with a worse case tolerance build which statistically does happen. Also the datum scheme is ill conceived for this I.P. The clip fasteners are in a ridiculous position relative to the objective which should have been to give highest priority to ensuring the gap, which should never of been there in the first place, was made to fit line-to-line. Dimensionally, this can only be controlled with securing clips near the edge of the top pad where you want to dimensionally control the assembly. Anyway, I want to help those out that have a Gen III S-series Saturn as the dealer will offer no relief nor are they willing to take the dive I did to resolve it. I will not turn this post into a treatise of design but will show you how to get your pad to sit lower in front and reduce the gap. Visualize the pad as a large topographical table top that is relatively rigid. If the forward edge is propped up due to imprecisely positioned clips or short table legs that keep the pad from laying down in front, you will see a gap with this design. What the dealer says about the pad warping over time is only half true. You can bring the pad down even if the stresses have relaxed resulting in some bell mouthing/distortion of the cover. Have a look at the underside of the top pad: http://members.roadfly.com/georgeman...adBackside.jpg You will note there are multiple clips that locate and hold the pad down. These clips both secure the pad vertically in place and "keep it from nesting all the way down due to improper vertical positioning". Have a look at a clip close up before modification: http://members.roadfly.com/georgemann/ClipBefore.jpg Basically what you must do to bring the pad down is remove the three clips shown, shorten the plastic locating projections by 0.25" with a dremmel...takes a deft hand but not that hard, then reinstall the clips. Have a look at a modified clip: http://members.roadfly.com/georgemann/ClipAfter.jpg Take note of where clip #3 is located. That clip should be much closer to the edge of where the gap exists between the bezel and I.P. pad, not way off in the middle where it does little good. Also, take note of the Gate in the bottom of the pad where the foam is injected to create this vinyl skin and foam top pad. The Gate on the backside of the pad was unusually elevated and interfered with the substrate/understructure of the I.P. This is simply resolved with a demmel leveling out the Gate but a needless design error. Lastly, here is a bit of a challenge for those who want to take this on. Disclaimer: I will preface this by saying in no way will I accept responsibility if you do this as it relates the passenger air-bag. The tolerances of this I.P. design are such that the two fasteners/7mm bolts right over the air-bag influence the vertical height of not only the passenger side portion of the top pad which is decently shingled but how the pad silhouettes the cluster bezel creating the gap on the right side of the brow over the cluster. There should have been some adjustability or float built into the right side bracket. To use a metaphor, this is because if you prop up the right edge of the table top you will create a gap in the middle under the table. If you lower the right side even though over the air bag is already cosmetically flush, it will bring the pad down in the middle over the bezel/cluster. Here is where it gets a bit tricky as I studied this in some length. You need to revise the position/build some adjustability into the U-nuts that retain the pass side of the pad if you want to drop the pad down on the right side for the reasons discussed. This is not easy and attempt it only if you are a pretty confident wrench...again I do not accept responsibility if you take this on as if the bracket is weakened too much, it will degrade the air-bag door's retention capability in the event of a deployment... particularly at cold temperature where the door flexure modulus increases. Have a look at the following pic of the

passenger side air-bag door bracket:
<http://members.roadfly.com/georgeman...AirbagBrkt.jpg>

This bracket not only attaches the pad but also secures the air-bag door during deployment. For that reason the bracket is not fully removable. If you remove the 3 screws however and deform the bracket slightly you can remove the U-nuts to modify the bracket. Once the U nuts are removed you can take a dremmel and remove some bracket material to relocate the U-nuts slightly lower on the bracket. You can also elongate the middle hole in the bracket vertically higher to slightly V the bracket to further lower both U-nut positions. After this simple dremmel exercise, reinstall the U-nuts and re-bolt the bracket to the top of the air-bag door. Again the bracket is threaded to the door from the backside with tamperproof screws so can't be removed but can be modified if you are willing to put forth the effort.

Take note I tried different interim measures to bring the top pad down and eliminate the gap but they didn't manifest the result I was after. I wanted it to look like it should and now it does. When reinstalling the top pad, push down on the passenger side of the pad with the heel of your hand while tightening the two 7mm bolts.

Here is the final result:
<http://members.roadfly.com/georgemann/IPGapAfter.jpg>
<http://members.roadfly.com/georgeman...riorResize.jpg>

I hope that helps other S-series owners or those considering an S-series in the future that may inherit this design issue which isn't easy to look at every day if you are passionate about cars and design as I am.

George
 '01 SC2 5spd

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06-01-2004, 11:25 PM

#2

wolfman

Super Member



Join Date: Jun 2002
 Location: Texas
 Posts: 12,066

[wolfman's Photos](#)



Last time I saw that much work done to fix a gap it was by an orthodontist and cost me \$3k. Nice job. It does look much better!

...

Old Saturns never die, people KILL them, so check your damn oil!
 "Unthinking respect for authority is the greatest enemy of truth." Albert Einstein

REWARD EXCELLENCE!



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06-03-2004, 08:00 PM

#3

gm7

Advanced Member



Join Date: Jan 2004
 Location: SW Florida
 Posts: 893

2009 VUE Red Line



Thank you brother. Since you know more about these cars than anyone on the board, I appreciate your compliment. It really is a big improvement. Having studied a number of S-series...there is some variance in terms how the I.P. top pad brow meets to the cluster bezel surface depending on particular car part variation. One can somewhat tailor the height of the clip projections based upon one's particular build condition. I took this on because I wanted to give back to this great board for all I have learned...especially from you. It goads me to no end that the I.P. which is nicely styled was designed this way...needless.

The amount of work involved isn't for everybody...but wanted to put something out there for those that are particular. Thanks for all you have contributed to this board Wolfman.

George

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06-19-2004, 01:27 AM

#4

junebuggy

Member



Join Date: Sep 2001
 Location: LB, CA



How cool. That gap has been driving me crazy all along. I have a 02 SC1 and I know EXACTLY what this is about. Thanks, GM7. I'm gonna try to fix up (or down?) mine now.

...

cardomain.com/ride/828730
 You can't scare me... I teach high school.

Posts: 326

[junebuggy's Photos](#) 

2002 SC1



REWARD EXCELLENCE!

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06-20-2004, 12:43 PM

#5

[gm7](#)

Advanced Member




Join Date: Jan 2004
Location: SW Florida
Posts: 893

2009 VUE Red Line



Be sure to post your results Junebuggy. My gap was pretty much uniform beginning just above the center of the instruments/top of the brow all the way to the right hand side of the brow until it meets the pass side air-bag module. The passenger air-bag bracket mod is tricky. You could try it without first and then if you need to draw the right hand side of pad down a tad further to eliminate all the gap....attack the mod for the bracket...but not for the feint of heart....Disclaimer in the post is there for a reason....what to help people, not the other way around.
Best of Luck,
George

REWARD EXCELLENCE!

 Rate the quality of this post and help *gm7* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!



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